Simeon **Tran**

simeonat.github.io | SimeonAT | simeon-tran

Education

University of California, Santa Cruz — *Santa Cruz, California*

M.S. in Computer Science and Engineering — *Sept. 2023 - Dec. 2025*

B.S. in Computer Science — *Jul. 2019 - Jun. 2023*

Master's Thesis

Comparative Study of Encryption Algorithms in Battery Powered Thread© Networks for Smart Homes — *Jan. 2024 - Dec. 2025*

https://simeonat.github.io/research/thesis

- Removed encryption algorithm used in OpenThread (AES) and replaced it with the ASCON encryption algorithms.
- Forked ESP-IDF source code to allow 802.15.4 compatible ESP32 devices to run my OpenThread ASCON fork.
- Showed that network performance and battery lifetime *not* significantly impacted.

Experience

Sphinox Inc. — *Jun. 2022 - PRESENT*

Full Stack Web Developer & Network Administrator

- Developer and maintainer for Next.js CRM web application to manage barber shop rewards program containing thousands of customer data.
- Responsible for securing network infrastructure by setting up VLANs and Tailscale ACLs, managing UniFi network devices, and maintaining backups on company servers.
- Responsible for hosting services on company servers, including internal password manager, deployment of barber shop CRM, along with Prometheus and Grafana for network monitoring.

Tech4Good Lab — *Jun. 2023 - Dec. 2023*

Lead Research Assistant — *Santa Cruz, California*

- Oversaw the development of an Express.js and OpenAPI server that used ChatGPT to create personalized learning curricula.
- Helped team members write unit tests to check the functionality of the prototype back-end server.
- Conducted interview studies on explore how ChatGPT can be used to automate the creation of personalized learning pathways.
- Developed the initial UI/UX flowchart for a web application used to design personalized learning experiences.

Web Developer Team Lead — *Apr. 2023 - Jun. 2023*

- Used Ionic and Capacitor to create infrastructure to allow all existing Angular projects to run as iOS and Android apps.
- Implemented Google OAuth login on iOS and Android using the Codetrix Capacitor Plugin.
- Wrote detailed documentation and onboarding instructions for new members to get them acquainted with Ionic.

Skills

Embedded Systems	ESP-IDF, OpenThread, nRF Connect, Analog Discovery 3
Networks	TCP/IP, Wireshark, Prometheus, Grafana, UniFi
Web Frameworks	Node.js, Deno, Next.js, Astro
Front-end	React, Angular
Databases	PostgreSQL, Firebase
Back-end	OpenAPI, GraphQL, Express.js
CI/CD	Docker, GitHub Actions
Programming	C/C++, Python, Typescript/Javascript, Haskell
Soft Skills	Teamwork, Leadership, Tutoring, Mentoring
Languages	English, Vietnamese

Projects

Daily Time Manager Web Application

Sept. 2022 - Dec. 2022

https://github.com/SimeonAT/Bagel.io/tree/main

- Worked with four fellow software engineering classmates to create a web app that generates visualizations based on completed tasks on a user's to-do list.
- Designed the UI for the task cards and to-do list.
- Developed both the React front-end and Node.js back-end implementations for the login and register pages.

Fractal Terrain Generation Program for Python Course

Apr. 2020

https://users.soe.ucsc.edu/~pang/30/s20/prog1/terrain_Simeon.txt

- Used Python Turtle Module and starter code provided by the class TA to create program that recursively generates random terrain.
- Developed extra features beyond what was asked, which encouraged graders and course faculty to label this program as a "star solution" on course website (`https://users.soe.ucsc.edu/~pang/30/s20/`).

Video Game Demo using Python and PyGame

Dec. 2020 - Dec. 2021

https://github.com/SimeonAT/SpaceViewerPyGame

- Created single-player game demo where players interact with objects in outer space.
- Implemented RPG-style text dialogue using object-oriented programming.
- Applied knowledge of data structures by creating a binary tree to store RPG text-box objects.
- Integrated pixel art sprites with Python code to create lively animations.

Teaching

Baskin Engineering at UCSC

Jun. 2024 - Jul. 2024

Full Stack Web Development Teaching Assistant — *Remote*

- Held daily office hours where I helped students with debugging
- Taught students web development using React, Express, and PostgreSQL
- Helped students develop the habit of Test Driven Development (TDD)

UC Santa Cruz Learning Support Services

Sep. 2020 - Jun. 2021

Python Course Tutor — *Remote*

- Held weekly remote tutoring sessions with diverse students for Introduction to Python course
- Assisted students on various Python concepts and basic object-oriented programming, assisting them in performing well on their assignments and exams
- Demonstrated knowledge of Python by creating programming examples and activities

UC Santa Cruz Academic Excellence Program

Oct. 2021 - Dec. 2021

Precalculus Tutor — *Remote*

- Was a tutor/mentor for Professor Morales-Almazan's Precalculus class, under the recommendation of the professor himself
- Helped students with Precalculus topics that they struggled with, allowing them to be better prepared for the homework and exams
- Gave freshman students from different backgrounds advice on how to navigate the university, in addition to assisting them with math